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Process Model of Plutonium Aqueous Recovery Operations in PF-4

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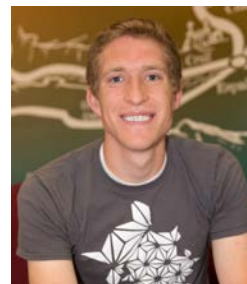
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Summer Fun



Devin Kimball (AET-2)

- Educational Background
 - BS Brigham Young University, 2016
 - PhD University of Tennessee, 2020ish
- Group
 - Process Modeling & Analysis
 - Robert Parker
- Research
 - Process Modeling of Aqueous Plutonium Recovery in PF-4

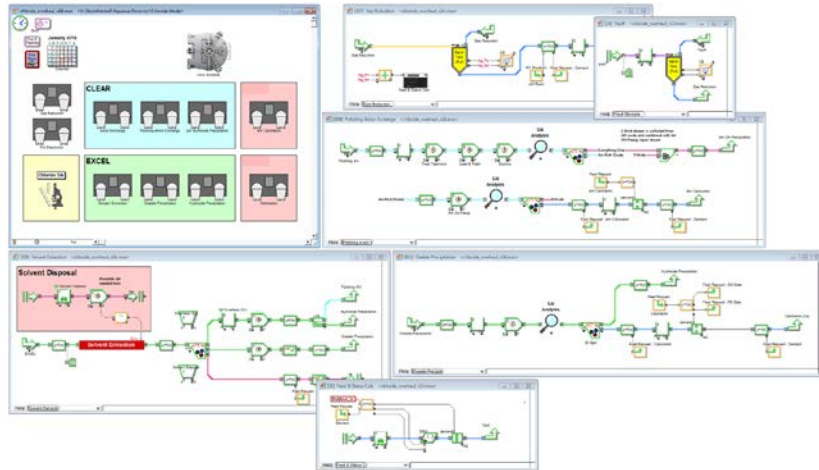


Research Overview and Motivation

- **Provide a systems level analysis of Pu aqueous recovery operations**
 - Process throughput, criticality analysis, etc.
- **Pu aqueous recovery supports pit fabrication in PF-4**
- **NA-22: understanding our process parameters helps with nonproliferation efforts**



Research Approach



- **ExtendSim discrete event simulator**
- **SNM throughput / capacity**
- **Personnel requirements**
- **Criticality limits**

Summary of Results

- **Aqueous Recovery**
 - Chloride Line
 - Nitrate Line
- **Pyrochemical Operations**
- **Integrated Model**
- **Criticality Analysis**